STATUS OF CLAIMS

1. (original) A method for monitoring biological micro-structure activity which produces detectable signals characterizing events, comprising the steps of estimating the fundamental frequency of the occurrence of events from the detectable signals, without detecting the occurrence of individual events.

2. (original) The method of claim 1 wherein events are analyzed during an analysis window which spans more than one event.

3. (previously presented) The method of claim 1 wherein the events are signals produced by biological micro-structures which are displaced from their original environment.

4. (previously presented) The method of claim 1 wherein the events are signals produced by living cells.

5. (original) The method of claim 4 wherein the events are signals produced by the Islets of Langerhans.

6. (currently amended) A method for monitoring biological micro-structure activity which produces detectable signals characterizing events, comprising the steps of estimating the fundamental frequency of the occurrence of events from the detectable signals, without detecting the occurrence of individual events, ~~The method of claim 1~~ wherein the estimating step includes an autocorrelation operation.

7. (original) The method of claim 6 further including one of the following steps:

estimating the fundamental frequency based upon a lower autocorrelation value disposed among several adjacent peaks;

treating "unvoiced" segments of the detectable signal as undecided as to pitch and estimating the pitch of those segments through subsequent processing;

seeking to estimate the fundamental frequency in the range of .25 to 5 Hertz;

utilizing an analysis window duration in the range of several seconds;

performing a pre-processing operation which has the effect of increasing the effective duration of an event; and

utilizing an autocorrelation process which performs segmented autocorrelation.

8. (currently amended) A method for monitoring biological micro-structure activity which produces detectable signals characterizing events, comprising the steps of estimating the fundamental frequency of the occurrence of events from the detectable signals, without detecting the occurrence of individual events, ~~The method of Claim 1~~ further comprising the step of using the number of "unvoiced" windows within a predetermined time as a measure of a blood constituent level of a patient.

9. (currently amended) A method for monitoring biological micro-structure activity which produces detectable signals characterizing events, comprising the steps of estimating the fundamental frequency of the occurrence of events from the detectable signals, without detecting the occurrence of individual events, ~~The method of Claim 1~~ further comprising the step of using a sureness grade as measure of a blood or tissue constituent level of a patient.

10. (original) The method of Claim 1 further comprising the step of using the fundamental frequency as a measure of a blood or tissue constituent level of a patient.

11. (original) The method of Claim 1 wherein the blood constituent level is the blood glucose level in the vicinity of the biological micro-structure.

12. (original) The method of claim 1 wherein the events are electrical signals produced by living cells in the Islets of Langerhans used as a probe within a patient and the fundamental frequency estimate is used as a measure of blood glucose level of the patient.

13. (currently amended) The method of claim 1, wherein an analysis window spans a duration of up to 40 times the interval between successive events.

14. (original) In a system for monitoring biological micro-structure activity which produces detectable signals characterizing events, a sensor capable of receiving the sensible signals and a processor including a module for estimating

the fundamental frequency of the occurrence of events from the detectable signals, without first detecting the occurrence of individual events.

15. (original) The system of claim 14 wherein the processor further comprises a module for producing an analysis window during which events are analyzed, the analysis window spanning more than one event.

16. (currently amended) In a system for monitoring biological micro-structure activity which produces detectable signals characterizing events, a sensor capable of receiving the sensible signals and a processor including a module for estimating the fundamental frequency of the occurrence of events from the detectable signals, without first detecting the occurrence of individual events, wherein the processor further comprises a module for producing an analysis window during which events are analyzed, the analysis window spanning more than one event, ~~The system of Claim 15~~ wherein the module for estimating includes components to perform an autocorrelation operation.

17. (currently amended) The system of Claim 16 wherein the module for estimating further includes one of the following submodules:

a submodule which estimates the fundamental frequency based upon a lower autocorrelation value disposed among several adjacent peaks;

a sub-module which identifies "unvoiced" segments of the detectable signal as undecided as to pitch, the pitch of those segments being estimated by a subsequent processing submodule;

a submodule which controls the estimate of the fundamental frequency to be in the range of .25 to 5 Hertz;

a submodule controlling the analysis window to have a duration in the range of several seconds; and

a submodule performing a pre-processing operation which has the effect of increasing the effective duration of an event.

18. (currently amended) In a system for monitoring biological micro-structure activity which produces detectable signals characterizing events, a sensor capable of receiving the sensible signals and a processor including a module for estimating the fundamental frequency of the occurrence of events from the detectable signals, without first detecting the occurrence of individual events, wherein the processor further comprises a module for producing an analysis window during which events are analyzed, the analysis window spanning more

than one event, ~~The system of Claim 15~~ wherein the processor is constructed to perform a segmented autocorrelation process.

19. (previously presented) The system of claim 15 wherein the sensor is a probe capable of detecting signals emitted by living cells in the Islets of Langerhans, the frequency estimate being an indication of blood glucose level of a patient in which those cells are present.

20. (currently amended) The system of claim 15, wherein an analysis window spans a duration of up to 40 times the interval between successive events.~~.~~

21. (currently amended) The method of claim ~~1~~2, wherein the events are signals produced by biological micro-structures which are displaced from their original environment.

22. (currently amended) The method of claim ~~1~~2, wherein the events are signals produced by living cells.

23. (canceled)

24. (currently amended) In a system for monitoring biological micro-structure activity which produces detectable signals characterizing events, a sensor capable of receiving the sensible signals and a processor including a module for estimating the fundamental frequency of the occurrence of events from the detectable signals, without first detecting the occurrence of individual events~~The system of claim 14~~, wherein the module for estimating includes components to perform an autocorrelation operation.

25. (currently amended) In a system for monitoring biological micro-structure activity which produces detectable signals characterizing events, a sensor capable of receiving the sensible signals and a processor including a module for estimating the fundamental frequency of the occurrence of events from the detectable signals, without first detecting the occurrence of individual events~~The system of claim 14~~, wherein the processor is constructed to perform a segmented autocorrelation process.

26. (currently amended) The system of claim 14, wherein the sensor is a probe capable of detecting signals emitted by living cells in the Islets of

Langerhans, the frequency estimate being an indication of blood glucose level of a patient in which those cells are present.

27. (currently amended) A method for monitoring biological micro-structure activity which produces detectable signals characterizing events, comprising the steps of estimating the fundamental frequency of the occurrence of events from the detectable signals, without detecting the occurrence of individual events, wherein events are analyzed during an analysis window which spans more than one event, ~~The method of claim 2~~ wherein the estimating step includes an autocorrelation operation.